

**KAVLI INSTITUTE FOR THEORETICAL PHYSICS**  
**[www.kitp.ucsb.edu](http://www.kitp.ucsb.edu)**

# KITP Conference: Disks, Dynamos, and Data: Confronting MHD Accretion Theory with Observations

(Jan 9 - Mar 30, 2017)

**Coordinators: Catherine Espaillat, Christian Knigge, Jim Stone, and  
Jean-Pierre Lasota-Hirszowicz**

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## **Monday, Feb 06, 2017**

### **Protoplanetary Disks I, Chair: Jim Stone (Princeton)**

8:50am	Lars Bildsten (KITP)	Welcome
9:00am	Meredith Hughes (Wesleyan)	Observational constraints on turbulence in protoplanetary disks from spatially resolved molecular-line observations
9:45am	Neal Turner (JPL/Caltech)	Detecting transport processes at work in protostellar disks
10:30am	<b>Morning Break</b>	
11:00am	Ilse Cleeves (CfA/Harvard)	Disk-ionization properties as revealed by molecular emission in disks
11:45am	Geoffroy Lesur (Grenoble)	Global dynamics of protoplanetary disks: The combined influence of non-ideal MHD and winds
12:30pm	<b>Lunch Break</b>	

### **Protoplanetary Disks II, Chair: Neal Turner (JPL/Caltech)**

2:00pm	Xuening Bai (CfA/Harvard)	Towards the most realistic MHD simulations of protoplanetary disks
2:45pm	Richard Nelson (Queen Mary London)	Turbulence in protoplanetary disks: the roles and influence of the vertical shear (VSI) and spiral wave instabilities (SWI)
3:30pm	<b>Afternoon Break</b>	
4:00pm	Catherine Espaillat (Boston U.)	Footprints of the magnetosphere: The star-disk connection in young accreting objects
4:45pm	Chris Johns-Krull (Rice)	Magnetically controlled accretion onto young stars: Testing current models
5:30pm	<b>SHUTTLE TO BWSCI</b>	

## **Tuesday, Feb 07, 2017**

### **Protoplanetary Disks III, Chair: Catherine Espaillat (Boston U.)**

9:00am	Natalia Dzyurkevich (MPIA)	What molecular-cloud collapse can teach us about initial conditions for planet formation in disks
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9:45am Joan Najita (NOAO)	Spectroscopic probes of turbulence in the planet-formation region of disks
10:30am	<b>Morning Break</b>
11:00am Zhaohuan Zhu (UNLV)	Young planets in protoplanetary disks: Theory confronts observations
11:45am Ted Bergin (Michigan)	Discussion Session
11:45am Lee Hartmann (Michigan)	Discussion Session
12:30pm	<b>Lunch Break</b>
<b>Close Binaries I, Chair: Christian Knigge (Soton)</b>	
2:00pm Paula Szkody (Washington)	Intriguing light curves of dwarf novae: Testbeds for accretion disk theories
2:45pm Matt Coleman (UCSB)	Convection modifies MHD turbulence in accretion disks
3:30pm	<b>Afternoon Break</b>
4:00pm Nick Higginbottom (Soton)	Thermal disk winds in X-ray binaries: Realistic heating and cooling rates give rise to slow, but massive outflows
4:45pm Daniel Proga (UNLV)	Radiation driven winds from MHD accretion disks
5:30pm	<b>POSTER SESSION / RECEPTION</b>
6:00pm	<b>SPECIAL EVENTS DINNER</b>
8:00pm	<b>SHUTTLE TO BWSCI</b>

**Wednesday, Feb 08, 2017****Close Binaries (II), Chair: Paula Szkody (U. Washington)**

9:00am Fiona Harrison (Caltech)	Ultraluminous X-ray sources: Recent progress and new puzzles
9:45am Aleksander Sadowski (MIT)	Simulations of radiative accretion flows at the lowest and not-so-low accretion rates
10:30am	<b>Morning Break</b>
11:00am Paul Groot (Radboud)	Observations of spiral density waves and dynamic behavior of accretion disks in (ultra) compact binaries
11:45am Christian Knigge (Univ. of Southampton)	Discussion Session
11:45am J.-P. Lasota (CNRS)	Discussion Session
12:30pm	<b>Lunch Break</b>
2:00pm	<b>FREE AFTERNOON-SHUTTLE AVAILABLE TO BWSCI</b>

**Thursday, Feb 09, 2017****Disks in AGN I, Chair: Charles Gammie (Illinois)**

9:00am Chris Done (Durham)	Black-hole observations and MRI simulations
9:45am Omer Blaes (UCSB)	Theoretical issues in luminous AGN accretion flows

10:30am **Morning Break**

11:00am Chelsea MacLeod (CfA/Harvard)	A systematic search for changing-look quasars in SDSS
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11:45am George Chartas (College of Charleston)	Quasar accretion-disk tomography
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12:30pm **Lunch Break**

### **Disks in AGN II, Chair: Monika Moscibrodzka (Radboud)**

2:00pm Chris Reynolds (Maryland)	Towards a first principles understanding of variability from accreting black holes
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2:45pm Anna Pancoast (CfA/Harvard)	Disks in the broad-line region of AGN
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3:30pm **Afternoon Break**

4:00pm Alexander Tchekhovskoy (LBL)	What makes a good jet?
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4:45pm Yan-fei Jiang (KITP)	Resolving puzzles of AGN observations based on 3D global radiation MHD simulations of accretion disks
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5:30pm **POSTER SESSION / RECEPTION**

6:00pm **SPECIAL EVENTS DINNER**

8:00pm **SHUTTLE TO BWSCI**

### **Friday, Feb 10, 2017**

### **Disks in AGN III, Chair: Omer Blaes (UCSB)**

9:00am Charles Gammie (Illinois)	Simulations of low accretion rate-black holes
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9:45am Monika Moscibrodzka (Radboud)	Polarization of light and Faraday rotation in GRMHD simulations of the jet launching zone of M87
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10:30am **Morning Break**

11:00am Jason Dexter (MPE)	Testing MHD accretion theory with event-horizon scale observations of low-luminosity AGN
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11:45am Chris Done (Durham Univ.)	Discussion Session
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11:45am Chris Reynolds (Maryland)	Discussion Session
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12:30pm **Lunch Break**

2:00pm **CONFERENCE END-SHUTTLE TO BWSCI \*Also available to SB Airport and SB Airbus, Goleta location (See Registration Desk to sign up.)**